## IN THE CLAIMS

Please amend the claims as follows:

1.      (Currently Amended) A branch prediction apparatus, comprising:

a base misprediction history register to provide an output;

a meta predictor to receive as inputs an index value and a branch prediction to generate a misprediction value in accordance with said inputs and said base misprediction history register output, said branch prediction generated in response to a branch request and said misprediction value comprising a value predicting whether said branch prediction is correct or incorrect; and

a logic gate to generate a final prediction based on receive said branch prediction and said misprediction value, to generate a final prediction said final prediction comprising information indicating whether said branch prediction is to be taken or reversed for said branch request according to said misprediction value.

2.      (Original) The branch prediction apparatus of claim 1, wherein said base misprediction history register includes misprediction history data.

3.      (Original) The branch prediction apparatus of claim 1, further comprising an instruction that provides said index value.

4.      (Original) The branch prediction apparatus of claim 3, wherein said instruction is a branch instruction.

5.      (Original) The branch prediction apparatus of claim 4, wherein said final prediction determines a branch for said branch instruction.

6.      (Previously presented) The branch prediction apparatus of claim 1, further comprising a branch predictor that receives said index value and generates said branch prediction.

7.      (Original) The branch prediction apparatus of claim 6, wherein said branch predictor utilizes a prediction scheme to generate said branch prediction.


8.      (Original) The branch prediction apparatus of claim 6, wherein said branch predictor includes a target address field and a prediction table.


9.      (Currently Amended) The branch prediction apparatus of claim 1, wherein said meta predictor is configured to be bypassed when said output from said base misprediction history register contains all ~~values of~~ zero (0) values.~~, and the misprediction value is not generated by said meta predictor.~~


10.     (Currently Amended) A method for predicting branches, comprising:
        receiving an index value, a branch prediction ~~value~~ correlating to said index value, and a misprediction history value at a meta predictor, said branch prediction generated in response to a branch request; ~~and~~
        generating a misprediction value at said meta predictor, said misprediction value comprising a value predicting whether said branch prediction is correct or incorrect; and
        generating a final prediction based on said branch prediction and said misprediction value, said final prediction comprising information indicating whether said branch prediction is to be taken or reversed for said branch request according to said misprediction value.


11.     (Currently Amended) The method of claim 10, further comprising:
        generating said branch prediction ~~value~~ at a branch predictor different from said meta predictor.


12.     (Currently Amended) The method of claim 11, further comprising:
        receiving said ~~an~~ index value at said branch predictor.


13.     (Canceled).

14.     (Currently Amended) The method of claim 10, further comprising:

~~determining a final value, and~~ updating said meta predictor and a ~~said~~ base misprediction history register from which said misprediction history value is provided, according to said final prediction ~~value~~.


15.     (Currently Amended) The method of claim 14, wherein said updating includes:

comparing said final prediction ~~value~~ to said branch prediction.


16.     (Currently Amended) The method of claim 10, further comprising:

bypassing said meta predictor when said misprediction history value contains all zeros (0).


17.     (Currently Amended) An apparatus ~~A processor~~, comprising:

a branch predictor to generate a branch prediction in response to a branch request;

a base misprediction history register to provide a misprediction history value;

a meta predictor to generate a misprediction value based on ~~receive~~ an index value, said branch prediction and said ~~base~~ misprediction history value, said misprediction value comprising a value predicting whether said branch prediction is correct or incorrect; and ~~register data to generate a misprediction value.~~

a logic gate to generate a final prediction based on said branch prediction and said misprediction value, said final prediction comprising information indicating whether said branch prediction is to be taken or reversed for said branch request according to said misprediction value.


18-19.  (Canceled).

**AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.114 - RCE**      **Page 5**
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Title: METHOD AND APPARATUS FOR PREDICTING BRANCHES USING A META PREDICTOR

20. (Currently Amended) A <u>non-transitory</u> computer<u>-</u> readable <u>storage device storing</u> ~~medium having stored a plurality of executable~~ instructions <u>which,</u> <u>when executed by one or</u> <u>more processors, configure the one or more processors to:</u> ~~the plurality of instructions~~ ~~comprising instructions to:~~

    receive an index value, a branch prediction ~~value~~ correlating to said index value, and a misprediction history value at a meta predictor<u>, said branch prediction generated in response to a</u> <u>branch request</u>; ~~and~~

    generate a misprediction value at said meta predictor<u>, said misprediction value</u> <u>comprising a value indicating whether said branch prediction is correct or incorrect; and</u>

    <u>generate a final prediction based on said branch prediction and said misprediction value,</u> <u>said final prediction comprising information indicating whether said branch prediction is to be</u> <u>taken or reversed for said branch request according to said misprediction value.</u>

21. (Currently Amended) The computer<u>-</u>readable medium of claim 20, <u>wherein the</u> <u>instructions, when executed by the one or more processors, configure the one or more processors</u> <u>to:</u> ~~further comprising~~

    ~~an instruction to~~ generate said branch prediction value at a branch predictor <u>different</u> <u>from said meta predictor</u>.

22. (Currently Amended) The computer<u>-</u>readable medium of claim 21, <u>wherein the</u> <u>instructions, when executed by the one or more processors, configure the one or more processors</u> <u>to:</u> ~~further comprising~~

    ~~an instruction to~~ receive <u>the</u> ~~an~~ index value at said branch predictor.

23. (Canceled).

24. (Original) A method for restoring a branch prediction apparatus following a branch misprediction of a branch instruction, comprising:

    restoring a base misprediction history register; and

    restoring a branch predictor history register.

25.     (Original) The method of claim 24, further comprising updating a branch predictor.


26.     (Original) The method of claim 24, further comprising updating a meta predictor.


27.     (Original) The method of claim 24, further comprising flushing an instruction pipeline processing said branch instruction.


28.     (New) The method of claim 24, wherein the branch predictor history register is to store one or more first values, each of the one or more first values indicating whether a previous branch was taken or not taken, and wherein the base misprediction history register is to store one or more second values, each of the one or more second values indicating whether the previous branch that was taken was predicted correctly or incorrectly.


29.     (New) The method of claim 24, wherein the restoring of the base misprediction history register comprises:

        setting the base misprediction history register with values corresponding to a specified number of recent branch occurrences prior to the branch misprediction.


30.     (New) The method of claim 24, wherein the restoring of the branch predictor history register comprises:

        setting the branch predictor history register with values corresponding to a specified number of recent branch occurrences prior to the branch misprediction.